

## JP3148622

Publication Title:

### OPTICAL RESTORATION FILTER FOR COLOR MOSAIC DISPLAY DEVICE

Abstract:

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**PURPOSE:** To eliminate noise generated from the dot structure of a color matrix by installing a diffraction grating for two-dimensionally decomposing the pictures of respective picture elements into various diffraction orders, piling up diffraction picture elements and generating interpolation among the picture elements on a front surface closest to the observation surface of a matrix display device.

**CONSTITUTION:** A filter is etched on glass and joined to the front surface of a plate or formed on flat substrate glass and the diffraction diffuser 42 of the planer structure is installed above a polarizer 43 closest to the observation surface. The matrix display device composed of an upper substrate color filter 44, a common electrode 45, a spacer 46, a liquid crystal material 47 and a lower substrate 49, etc., is provided below the polarizer 43 and the polarizer 50 is provided below the lower substrate 49. When the picture of the respective pixels of the display device are passed through the grating, their pictures are two-dimensionally decomposed into the various diffraction orders, the diffraction pixels are piled up, the interpolation is generated among the pixels and thus, the detection of a lower layer grating structure and high frequency energy is minimized. The degree of the interpolation is easily controlled by changing the interval of the diffraction grating 31 and a display plate 30.

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